

DOCUMENT A00832

APPENDIX D

MASSACHUSETTS DEPARTMENT OF

ENVIRONMENTAL PROTECTION

WATER QUALITY CERTIFICATE

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APPENDIX D

SILVER LINE GATEWAY CHELSEA, MA

WATER QUALITY CERTIFICATION

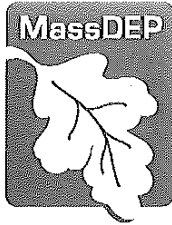
Issued by:

**Massachusetts Department of Environmental Protection
Transmittal # X259698**

CATEGORY 2 MASSACHUSETTS GENERAL PERMIT

Issued By:

**US Army Corps of Engineers, NE District, Regulatory Division
File No. NAE-2013-02144**



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

DAVID W. CASH
Commissioner

June 13, 2014

MassDOT – Highway Division
Ten Park Plaza, Room 4260
Boston, MA 02116
Attn: Susan McArthur

TRANSMITTAL # X259698

RE: WATER QUALITY CERTIFICATION
Application for: BRP WW 10
MAJOR FILL AND EXCAVATION PROJECTS – ROADWAY PROJECT

AT: Silver Line Gateway
Chelsea
Boston Harbor Watershed

Dear Ms. McArthur:

The Department of Environmental Protection (“MassDEP”) has reviewed your application for a Water Quality Certification, as referenced above. In accordance with the provisions of MGL Ch. 21, §§26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), it has been determined there is reasonable assurance the proposed project will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The proposed project entails the extension of the Silver Line Bus Rapid Transit (BRT) service from South Station and the Seaport District in Boston through Chelsea and East Boston. The construction of a section within the former Grand Junction (CSX) Railroad Right of Way (ROW) located between Griffin Way and Cottage Street and a shared-use path adjacent to the BRT will require the unavoidable loss of 13,798 square feet (sf) of Isolated Vegetated Wetland (IVW). There are two (2) areas of IVW within the CSX Railroad ROW. Mitigation will consist of the construction of vegetated swales with sub-drains to mitigate the loss of functions for the IVW's. The mitigation area will be 14,125 sf with storage volume of 14,610 cubic feet. The swales will be constructed between the bus lanes and the shared-use path. Additional stormwater measures will include the installation of deep-sump catch basins with drainage manholes and a drainage

trunk line corridor. Stormwater management improvements will be provided throughout this section of the corridor.

The total length of the Silver Line BRT route is approximately 10.1 miles, of which approximately 8.9 miles will occur over existing roads. The project will require improvements to be made to an approximately 0.6 mile abandoned segment of the former CSX right-of-way which extends from Eastern Avenue to an underpass beneath the Broadway Bridge. No work is proposed within the jurisdiction of the Wetlands Protection Act. On December 3, 2013 the Chelsea Conservation Commission issued a Negative Determination and found that the IVW's were not an Area Subject to Protection under the Act.

These findings for the Silver Line Gateway project have been prepared in accordance with the provisions of M.G.L. c. 30; section 61 and 301 CMR 11.00. On December 27, 2013, the Secretary of Environmental Affairs, Richard K. Sullivan, Jr. issued a certificate (EOEA #15124) stating that this project requires the preparation of a mandatory Environmental Impact Report (EIR). The Secretary determined that a Single EIR (SEIR) could be filed.

On March 31, 2014, MassDOT filed a SEIR. On May 16, 2014 the Secretary issued a certificate (EOEA #15124) stating that "...I hereby determine that the SEIR submitted for this project adequately and properly complies with MEPA..." A description of the potential impacts is described in this Water Quality Certificate WQC). A description of the mitigation measures is included in this WQC.

The Secretary stated in the May 16, 2014 Certificate that "...MassDOT should revise its calculations for removal of Total Suspended Solids (TSS) for the busway sections with swales and leaching catch basins in order to ensure consistency with the *Stormwater Management Handbooks*..."

In response, MassDOT has submitted revised TSS calculation worksheets. The calculated TSS removal rates are as follows:

- Busway section with the biofilter swale: Total TSS removal revised to 70%;
- Busway section with leaching basins: Total TSS removal revised to 55% with an assumed TSS rate for in-line leaching basins of half of off-line basins; and
- Busway section without swale or leaching basins: Total TSS removal revised to 25%

In addition, MassDOT provided additional information to address the concerns/questions raised by MassDEP in its comment letter on the SEIR. Following review of this information the Department has determined that MassDOT has adequately demonstrated that the Stormwater Standards have been met to the maximum extent practicable and that the highest practicable level of stormwater management is being provided.

The Department has reviewed the MEPA documents and the documents submitted in connection with the application for a permit. Based upon its review, the Department finds that implementation of the terms and conditions of this permit constitute all feasible measures to avoid damage to the environment and will minimize and mitigate such damage to the maximum extent practicable. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the permit.

Based on a review of information provided by the applicant, MassDEP finds that this project complies with the standards described under 314 CMR 9.06. Public notice was provided in the Chelsea Record on March 6, 2014 and in the Environmental Monitor on March 12, 2014. No comments were received during the public comment period which closed on March 27, 2014 and April 2, 2014 respectively.

MassDEP hereby grants a Water Quality Certification for this project subject to the following Special Conditions to maintain water quality, to minimize impact on waters and wetlands and to ensure compliance with appropriate state law:

1. This project could result in a violation of the water quality standards adopted by MassDEP's Division of Water Pollution Control. Therefore, reasonable care and diligence shall be taken by the applicant to ensure that the proposed activity will not violate Inland Water Class B criteria [314 CMR 4.05 (3)(b) and (5)].
2. All work shall be performed in accordance with the following documents and plans:
 - Application for Water Quality Certificate dated February 27, 2014, Transmittal Form #X259698, with attachments.
 - Plan entitled: "Silver Line Gateway in the City of Chelsea Suffolk County Section 401/404 Permit Application Plans" 9 sheets; Dated: February 2014.
3. MassDEP shall be notified of any changes in plans affecting waters or wetlands. MassDEP will determine whether the change(s) requires a revision to this Certification.
4. Prior to the start of work, the applicant shall provide MassDEP with 100% Design Plans that are signed and stamped by a Professional Engineer or Professional Land Surveyor.
5. Prior to the start of work, the applicant shall provide MassDEP with the name, address and phone number(s) of the person responsible for ensuring that all work complies with the conditions of this Water Quality Certification.
6. Prior to commencement of construction adequate erosion control measures shall be installed to protect all wetland resource areas. Erosion control measures may consist of, but are not limited to silt fence, staked hay bales, silt curtains/booms, silt bags, compost filter tubes, etc.

7. A stockpile of erosion control materials shall be kept on-site at all times for emergency and routine replacement. The materials may include but is not limited to silt fence, hay bales, stone riprap, filter dikes, compost filter tubes or any other devices planned for use during construction.
8. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify MassDEP, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by MassDEP pursuant to this Certification.
9. Prior to commencement of construction “catch basin protection” measures, as shown on the detail on sheet 4 of 9 (Construction Detail Plan 2) shall be installed in all catch basins that may be impacted by construction.
10. The “catch basin protection” measures shall be inspected and cleaned or replaced, as necessary, throughout the duration of construction.
11. Work shall be performed in accordance with the Draft Construction Management Plan (CMP) that was included with the SEIR which described project activities and their anticipated construction sequencing, site access and truck routing, staging and site preparation, and Best Management Practices (BMPs) that will avoid and minimize adverse environmental impacts.
12. Street sweeping shall be performed as necessary, throughout construction, to prevent accumulated sediments/debris from entering the drainage system.
13. Application of water and/or calcium chloride for dust control shall be utilized as necessary.
14. The temporary gravel construction entrance/exit(s) shall be constructed as shown on the detail on sheet 4 of 9 (Construction Detail Plan 2) and adequately maintained throughout construction.
15. No more than 13,798 sf of Isolated Vegetated Wetland shall be permanently altered.
16. All vegetated swales/bioretenction basin shall be constructed in accordance with the “Vegetated Swale” specification shown on sheet 3 of 9 (Construction Detail Plan 1).
17. The vegetated swale/bioretenction basin shall be planted as shown on the “Typical Planting Layout” shown on sheet 3 of 9 (Construction Detail Plan 1).

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18. Upon completion of construction and stabilization of the site all erosion control barriers shall be removed.
19. No activity authorized by this Water Quality Certification may begin prior to the expiration of the 21-day appeal period or until a final decision is issued by MassDEP if an appeal is filed.
20. All submittals required by the Army Corps of Engineers Section 404 permit shall also be sent to the Department preferably via email to christopher.ross@state.ma.us

Failure to comply with this Certification is grounds for enforcement, including civil and criminal penalties, under MGL Ch. 21 §42, MGL Ch. 21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations.

NOTICE OF APPEAL RIGHTS

A) Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by MassDEP when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or (d) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to MassDEP, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Case Administrator
Department of Environmental Protection
One Winter Street, 2nd Floor
Boston, MA 02108

A copy of the request shall at the same time be sent by certified mail or hand delivery to the Department of Environmental Protection at:

Department of Environmental Protection
Commissioner's Office
One Winter Street, 2nd Floor
Boston, MA 02108

B) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with MassDEP's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 314 CMR 9.10(3):

- (a) the 401 Certification Transmittal Number;
- (b) the complete name of the applicant and address of the project;

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- (c) the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- (d) if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- (e) a clear and concise statement that an adjudicatory hearing is being requested;
- (f) a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the MassDEP's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- (g) a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

C) Filing Fee and Address

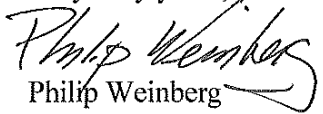
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:


Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
PO Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. MassDEP may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Should you have any questions relative to this permit, please contact Chris Ross at (508) 946-2813.

Very truly yours,


Philip Weinberg
MassDot Project Supervisor


Christopher Ross
MassDOT Project Manager

PW/cr

cc: Chelsea Conservation Commission
500 Broadway, Room #101-104
Chelsea, MA 02150

Ecc DEP-NERO - Heidi Davis
ACOE- Alan Anacheke-Nasemann



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD MA 01742-2751

March 19, 2014

Regulatory Division
File Number: NAE-2013-02144

Ms. Susan McArthur, Wetlands Unit Supervisor
Massachusetts Department of Transportation – Highway Division
10 Park Plaza, Suite 4260
Boston, Massachusetts 02116

Dear Ms. McArthur:

We have reviewed your application to discharge fill material into 13,798 ft² (0.30 acre) of emergent wetlands in order to extend the existing MBTA Silver Line Bus Rapid Transit Line from South Station and the Boston Seaport District to Chelsea and East Boston, MA. This project is located in unnamed wetlands on the former Grand Junction Railroad right-of-way between Cottage Street and Library Street, Chelsea, Massachusetts. The work is shown on the enclosed plans entitled "SILVER LINE GTATEWAY, CHELSEA, MA, SUFFOLK COUNTY", on 9 sheets, and dated "FEB. 2014".

Based on the information you have provided, we have determined that the proposed activity, which includes a discharge of dredged or fill material into waters or wetlands, will have only minimal individual or cumulative environmental impacts on waters of the United States, including wetlands. Therefore, this work is authorized as a Category 2 activity under the enclosed Federal permit known as the Massachusetts General Permit (GP). This work must be performed in accordance with the terms and conditions of the GP and also in compliance with the following special condition(s):

1. In order to ensure that the vegetated swales/bioretenion areas replace on-site water quality functions of the existing wetlands, a Vegetated Swale/Bioretenion Basin Construction Report must be forwarded to this office by December 31 in the year of completion of all construction activities, or by an approved extension. For purposes of this special condition, "completion" means all activities associated with site grading, seeding, planting and/or transplanting. The construction report must include the following:
 - a. An "as-built" plan view which includes a topographic survey of the vegetated swale areas/bioretenion basins at 0.5 foot contour intervals, and with respect to the transportation corridor and multiple-use trail.
 - b. Photographs from fixed locations, along with a photo-location map.
 - c. A list of plants introduced through seeding and/or planting.
 - d. Water depth and date of measurement from representative locations within the construction area. The sample points will be fixed locations and shall be plotted on the photo-location map.

e. A list of any modifications that were made from the original plan.

2. Except where stated otherwise, reports, drawings, correspondence and any other submittals required by this permit shall be marked with the words "Permit No. NAE-2013-02144" and shall be submitted via: a) MAIL: PATS Branch - Regulatory Division, Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751, or b) FAX: (978) 318-8303. Documents which are not marked and addressed in this manner may not reach their intended destination and do not comply with the requirements of this permit. Requirements for immediate notification to the Corps shall be done by telephone to (978) 318-8338.

You are responsible for complying with all of the GP's requirements. Please review the enclosed GP carefully, in particular the GP conditions beginning on Page 6, to familiarize yourself with its contents. You should ensure that whoever does the work fully understands the requirements and that a copy of the permit document and this authorization letter are at the project site throughout the time the work is underway.

This determination becomes valid only after the Massachusetts Department of Environmental Protection (MassDEP) issues or waives Water Quality Certification (WQC) as required under Section 401 of the Clean Water Act. In the event the MassDEP denies the 401 WQC, this determination becomes null and void. The address of the MassDEP Regional office for your area is provided in the enclosed GP.

Your project is located within, or may affect resources within the coastal zone. The Massachusetts Office of Coastal Zone Management (CZM) has already determined that no further Federal Consistency Review is required.

This GP expires on January 20, 2015. Activities authorized under this GP that have commenced (i.e., are under construction) or are under contract to commence before this GP expires will have until January 21, 2016 to complete the activity under the terms and general conditions of the current GP. For work within Corps jurisdiction that is not completed by January 21, 2016, you will need to reference any reissued GP to see if your project is still authorized under Category 1 (no application required), or Category 2 (application required). If it is no longer authorized you must submit an application and receive written authorization before you can continue work within our jurisdiction. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction. This office must approve any changes before you undertake them.

This authorization requires you to complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must also complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).

This authorization presumes that the work as described above and as shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, submit a request for an approved jurisdictional determination in writing to this office.

This permit does not obviate the need to obtain other federal, state, or local authorizations required by law, as listed on Page 2 of the GP. Performing work not specifically authorized by this determination or failing to comply with any special condition(s) provided above or all the terms and conditions of the GP may subject you to the enforcement provisions of our regulations.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Please contact Alan Anacheke-Nasemann, of my staff, at 978-318-8214, or via e-mail at: alan.r.anacheke-nasemann@usace.army.mil if you have any questions.

Sincerely,



Robert J. DeSista
Acting Chief, Regulatory Division

Enclosures

Copies Furnished:

Ed Reiner, U.S. EPA, Region 1, Boston, Massachusetts, reiner.ed@epa.gov

Christopher Ross, DEP SERO, Wetlands and Waterways, Lakeville, Massachusetts,

Christopher.Ross@state.ma.us

Robert Boeri, Coastal Zone Management, Boston, Massachusetts, Robert.Boeri@state.ma.us

Chelsea Conservation Commission, City Hall, 500 Broadway, Room #101-104, Chelsea, MA
02150

Thomas Keough, AECOM, Chelmsford, MA, Thomas.Keough@aecom.com



**US Army Corps
of Engineers®**
New England District

**GENERAL PERMIT
WORK-START NOTIFICATION FORM**
(Minimum Notice: Two weeks before work begins)

* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Permits and Enforcement Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *

Corps of Engineers Permit No. NAE-2013-02144 was issued to **MassDOT – Highway Division**, on **March 19, 2014**. This work is located in **unnamed wetlands at the former Grand Junction Railroad Right of Way between Cottage Street and Library Street, Chelsea, Massachusetts**. The permit authorized the permittee to **discharge fill material into 13,798 ft² (0.30 acre) of emergent wetlands in order to extend the existing MBTA Silver Line Bus Rapid Transit Line from South Station and the Boston Seaport District to Chelsea and East Boston, MA.**

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Telephone Numbers: () _____ () _____

Proposed Work Dates: **Start:** _____ **Finish:** _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: _____ **Date Permit Expires:** _____

FOR USE BY THE CORPS OF ENGINEERS

PM: Anacheka-Nasemann **Submittals Required:** YES

Inspection Recommendation: _____



**US Army Corps
of Engineers®**
New England District

(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

Permit Number: NAE-2013-02144

Project Manager: Anacheke-Nasemann

Name of Permittee: MassDOT – Highway Division

Permit Issuance Date: March 19, 2014

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

 * MAIL TO: U.S. Army Corps of Engineers, New England District *
 * Permits and Enforcement Branch A *
 * Regulatory Division *
 * 696 Virginia Road *
 * Concord, Massachusetts 01742-2751 *

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number



Portion of Boston North and Boston South
1:25000 USGS quadrangles.
Source: Esri

Proposed Project

Figure 1
Project Locus Map
Chelsea, Massachusetts

October 2013

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

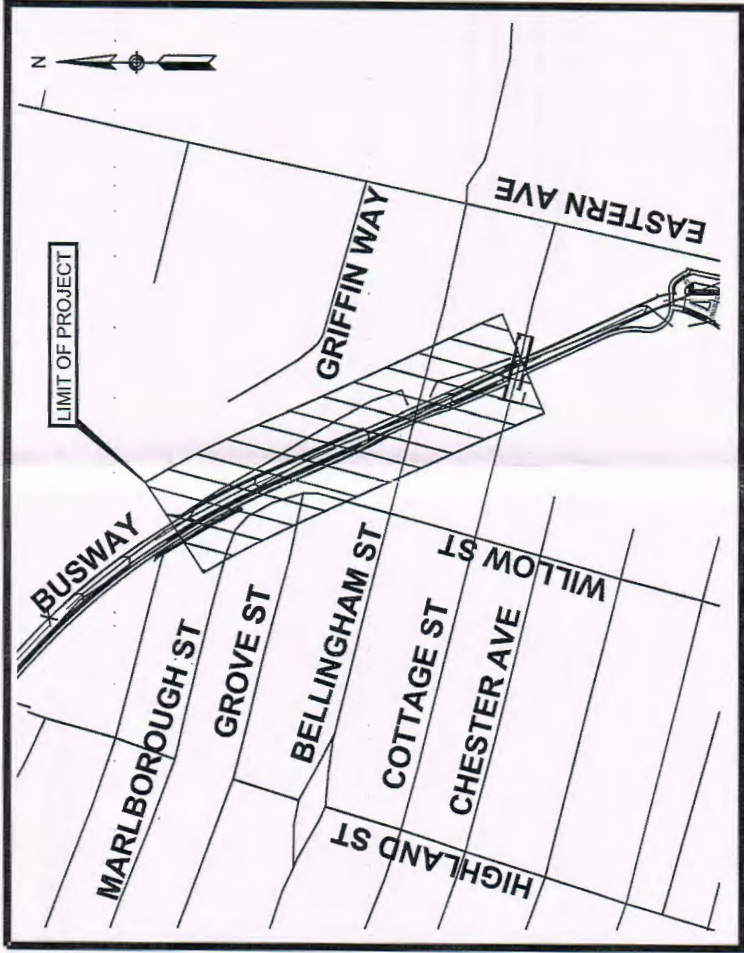
PLAN AND PROFILE OF
SILVER LINE GATEWAY
IN THE CITY OF
CHELSEA
SUFFOLK COUNTY

FEDERAL AID PROJECT NO.

SECTION 401/404 PERMIT APPLICATION PLANS

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & GENERAL NOTES
3-5	CONSTRUCTION DETAIL PLAN
6-7	EXISTING CONDITION PLAN
8-9	PROPOSED SITE PLAN

INDEX














































































































0 250 500 750 1000
SCALE: 1" = 500'
WILL PLOT TO SCALE ON 11"x17" FORMAT

APPROXIMATE LENGTH OF PROJECT = 1.3 MILES

DATE: FEBRUARY 2014

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

GENERAL NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASEMAP ARE THE RESULT AN AERIAL MAPPING SURVEY PERFORMED BY THE SANBORN MAP COMPANY, INC. AS FLOWN ON SATURDAY SEPTEMBER 28, 2013 AND AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN OCTOBER 25, 2013 AND JANUARY 9, 2014. BY GREEN INTERNATIONAL AFFILIATES, INC. PORTIONS OF WASHINGTON AVENUE WERE SURVEYED BY RICHARD F. KAMINSKI & ASSOCIATES, INC. IN MARCH OF 2006, GREEN INTERNATIONAL AFFILIATES, INC. HAS UPDATED THIS INFORMATION TO REFLECT RECONSTRUCTION ON WASHINGTON AVENUE NORTH OF THE RAILROAD CROSSING.
2. HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD83) ESTABLISHED BY GPS METHODS. VERTICAL DATUM IS NAVD88 ESTABLISHED BY GPS METHODS.
3. WETLANDS WERE DELINEATED BY AECOM IN OCTOBER 2013 IN ACCORDANCE WITH USACOE AND MASSDEP PROCEDURES AND FIELD LOCATED BY GREEN INTERNATIONAL AFFILIATES, INC. ON NOVEMBER 5 & 6 2013.
4. THE RIGHT OF WAY LINES SHOWN ON THIS PLAN ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN INTERNATIONAL AFFILIATES, INC. WITH AN ERROR OF CLOSURE LESS THAN 1:10,000, AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES ARE FROM GIS INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
5. THE CONTRACTOR SHALL INSTALL COMPOST FILTER TUBES AT THE BOTTOM OF SLOPE PRIOR TO START OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
6. DISTURBED UNPAVED SURFACES WITHIN THE PROJECT LIMITS SHALL BE TOPSOILED & SEEDED.
7. AREAS OUTSIDE THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.
8. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO ABUTTING PROPERTIES DURING CONSTRUCTION.



AECOM

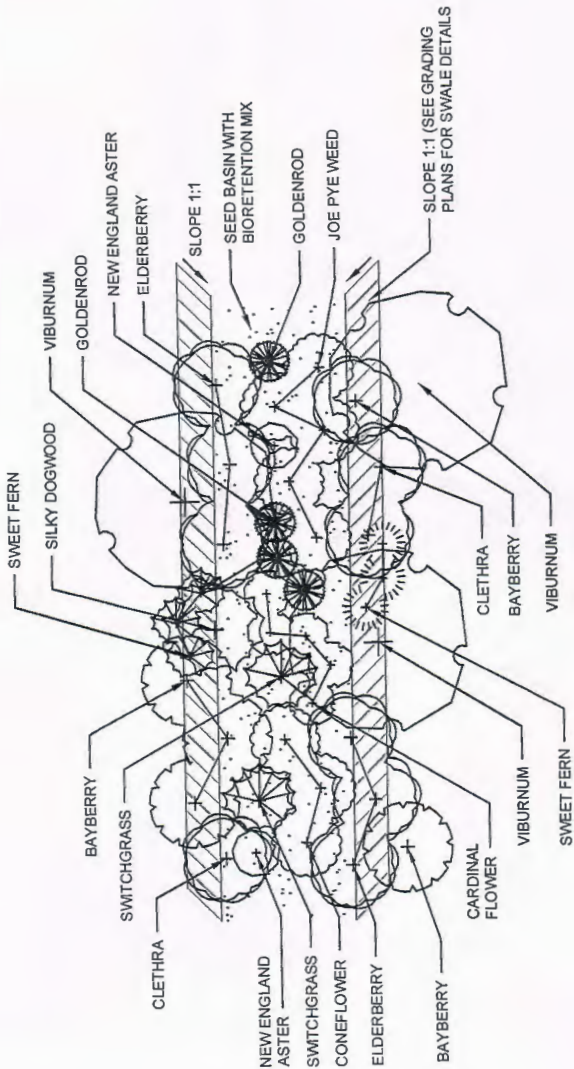
APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY
CHELSEA, MA
SUFFOLK COUNTY

LEGEND & GENERAL NOTES

GN-1 SHEET 2 OF 9



TYPICAL PLANTING LAYOUT

NTS

PLANTING LIST: BIORETENTION BASIN

SHRUBS

BOTANICAL NAME	COMMON NAME	HEIGHT/SPREAD	INSTALL SIZE	SPACING
CLETHRA ALNIFOLIA	SWEET PEPPERBUSH	10 FT X 8 FT	2'-3 FT	5 FT O.C.
CORNUS AMOMUM	SILKY DOGWOOD	6 FT X 6 FT	18" - 24"	4 FT O.C.
MYRICA PENNSYLVANICA	BAYBERRY	8 FT X 8 FT	2'-3 FT	5 FT O.C.
SAMBUCUS CANADENSIS	ELDERBERRY	10 FT X 10 FT	2'-3 FT	8 FT O.C.
VIBURNUM CASSINOIDES	WITHEROD VIBURNUM	8 FT X 8 FT	18" - 24"	5 FT O.C.

HERBACEOUS PLANTS

BOTANICAL NAME	COMMON NAME	HEIGHT/SPREAD	INSTALL SIZE	SPACING
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	24 IN X 24 IN	2" PLUG	18 IN O.C.
ASTER NOVAE-ANGIAE	NEW ENGLAND ASTER	4 FT X 3 FT	2" PLUG	2 FT O.C.
COMPTONIA PEREGRINA	SWEET FERN	3 FT X 5 FT	2" PLUG	3 FT O.C.
EUPATORIUM PURPUREUM	JOE PYE WEED	6 FT X 3 FT	2" PLUG	2 FT O.C.
LOBELIA CARDINALIS	CARDINAL FLOWER	3 FT X 2 FT	2" PLUG	2 FT O.C.
PANICUM VIRGATUM	SWITCHGRASS	6 FT X 3 FT	2" PLUG	3 FT O.C.
RUDBECKIA LACINIATA	CONEFLOWER	6 FT X 3 FT	2" PLUG	2 FT O.C.
SOLIDAGO SEMPERVIRENS	GOLDENROD	4 FT X 3 FT	2" PLUG	2 FT O.C.

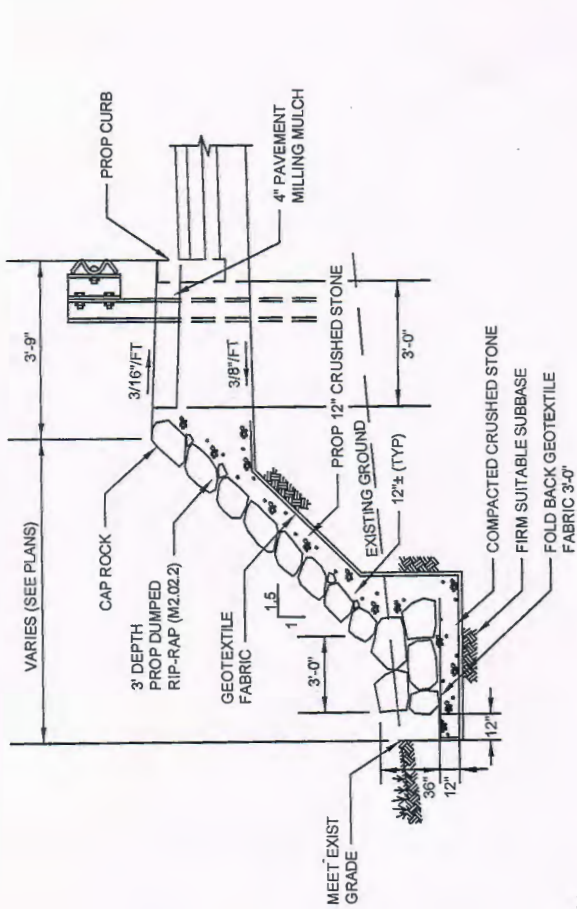
SEED MIX

SPREAD SEED THROUGHOUT LIMITS OF BIORETENTION BASIN(S)	
40%	VIRGINIA WILDRYE
29%	FOX SEDGE
10%	LITTLE BLUESTEM
10%	SWITCHGRASS
5%	AUTUMN BENTGRASS
3%	SOFT RUSH
2%	ROUGH BENTGRASS
1%	PATH RUSH

ULYMUS VIRGINICUS
CAREX VULPINOIDEA
SCHIZACHYRIUM SCOPARIUM
PANICUM VIRGATUM
AGROSTIS PERENNANS
JUNCUS EFFUSUS
AGROSTIS SCABRA
JUNCUS TENUIS



AECOM

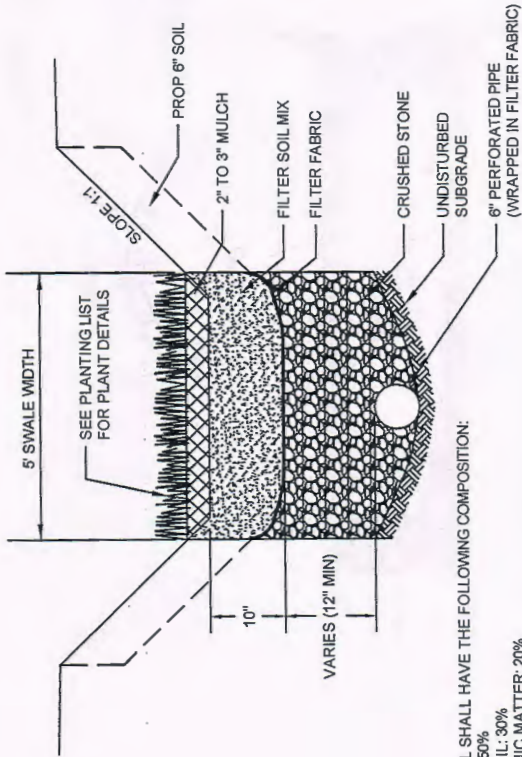


NOTE:

RIP-RAP SLOPE SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT DRAWING 2.4.1 OF THE BRIDGE MANUAL STANDARD SPECIFICATIONS ITEM 983. AND MATERIALS SHALL MEET THE REQUIREMENTS AS SPECIFIED IN SUBSECTION M2.02.2.

RIP-RAP SLOPE DETAIL

NTS



NOTE:

FILTER SOIL SHALL HAVE THE FOLLOWING COMPOSITION:

- SAND: 50%
- TOPSOIL: 30%
- ORGANIC MATTER: 20%
- pH RANGE: 5.5 - 6.5

VEGETATED SWALE

NTS

NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY

CHELSEA, MA

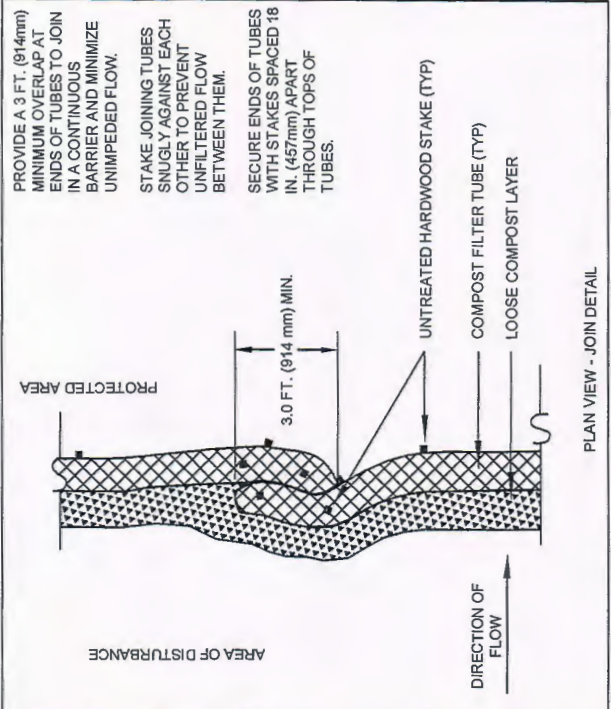
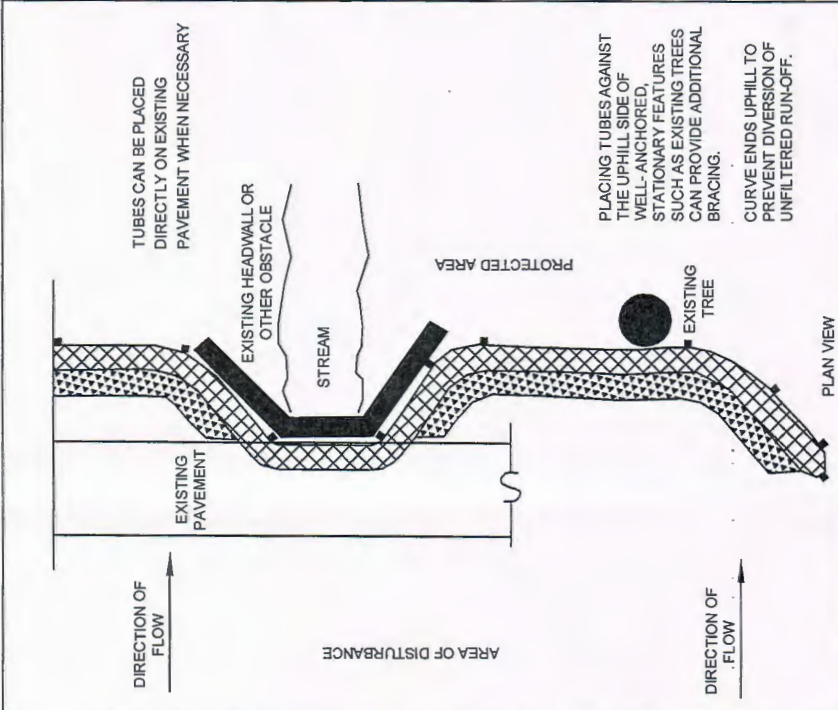
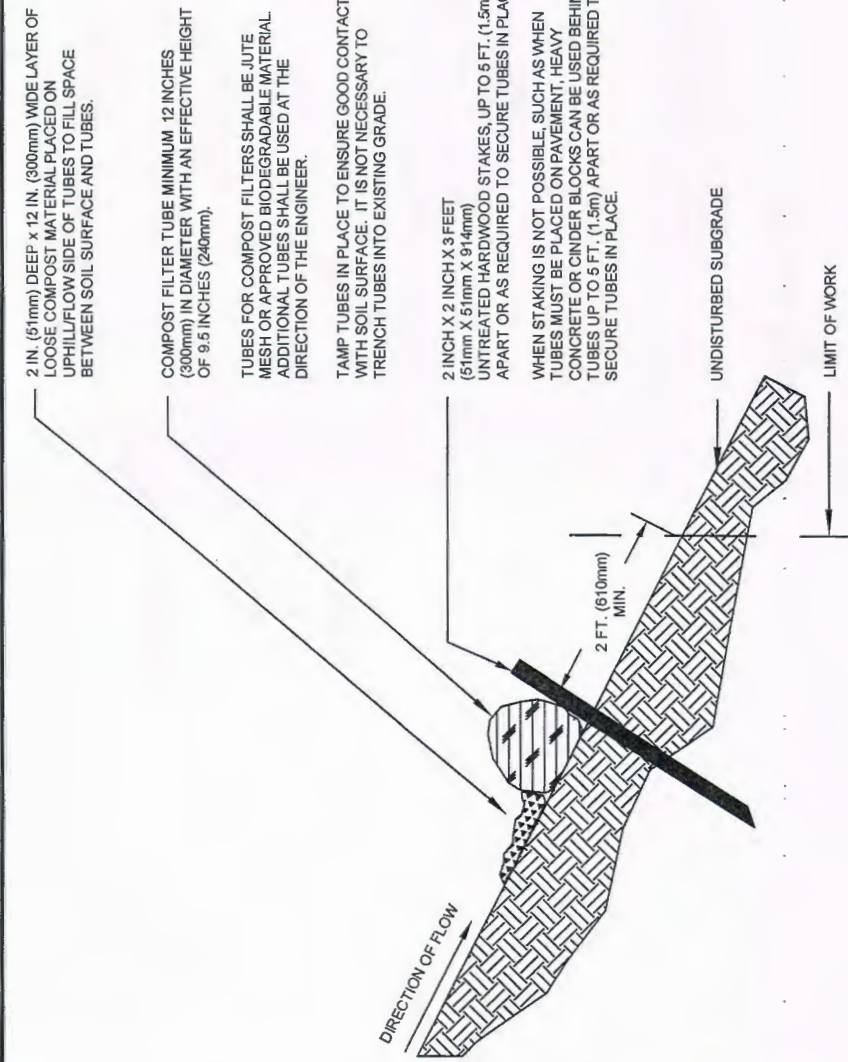
SUFFOLK COUNTY

CONSTRUCTION DETAIL PLAN 1

SHEET 3 OF 9

SCALE: NTS

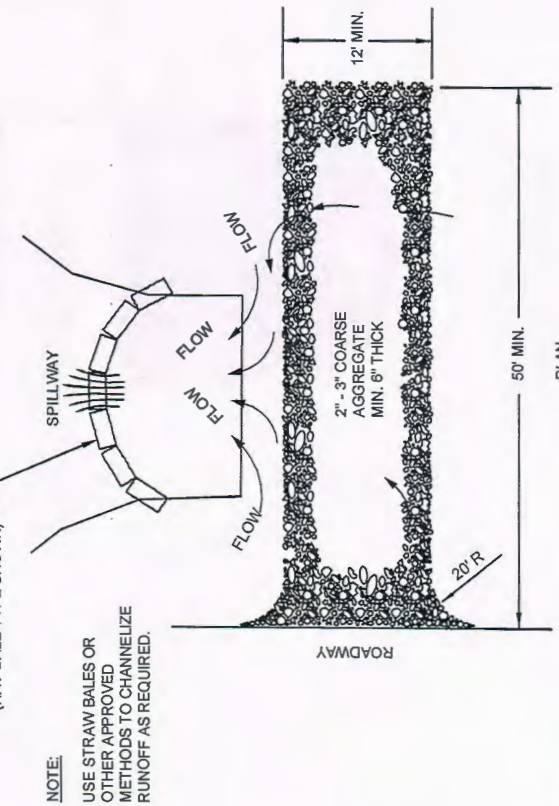
DATE: FEB. 2014



- NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
 3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
 - 4.

SINGLE COMPOST FILTER TUBE DETAIL

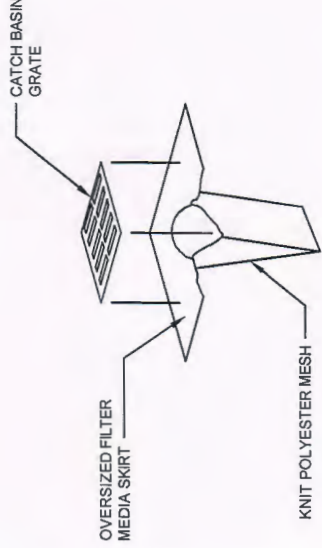
NTS



NOTE:
THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT OUT OF THE CONSTRUCTION AREA. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

CATCH BASIN PROTECTION

NTS



NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY
CHELSEA, MA

SUFFOLK COUNTY

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

DATE: FEB. 2014

SCALE: NTS

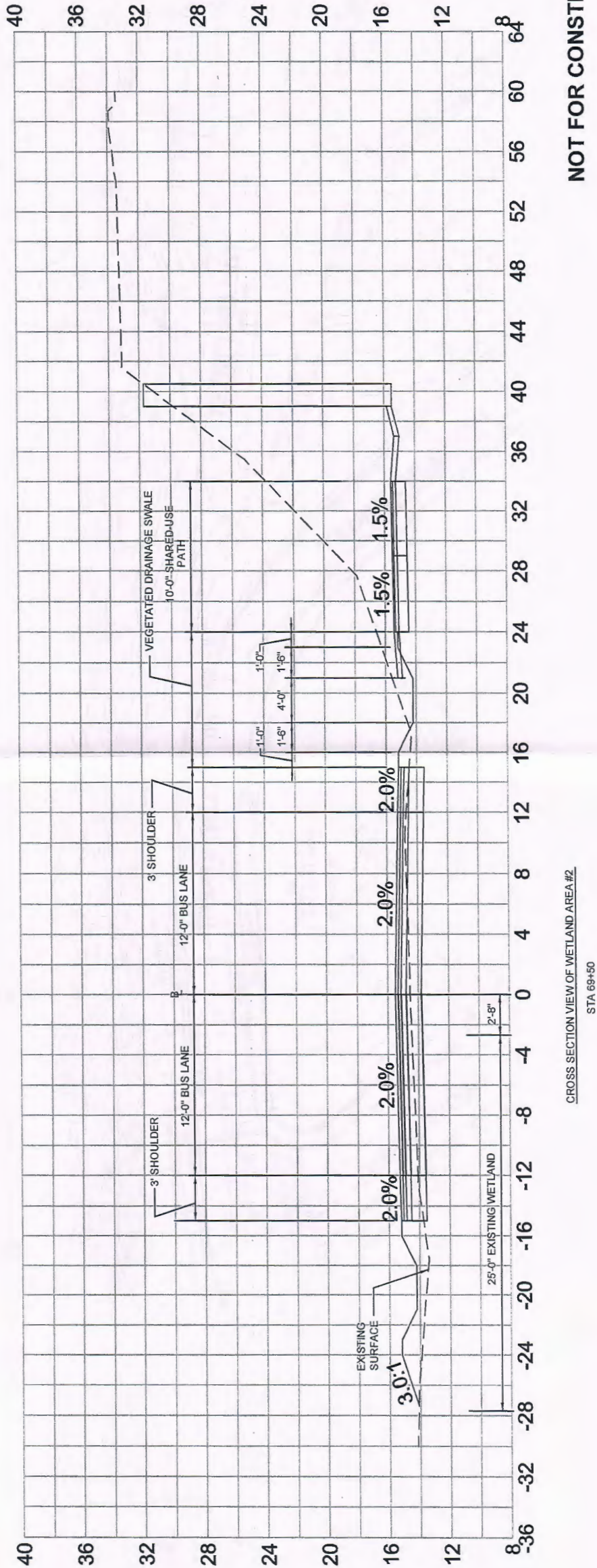
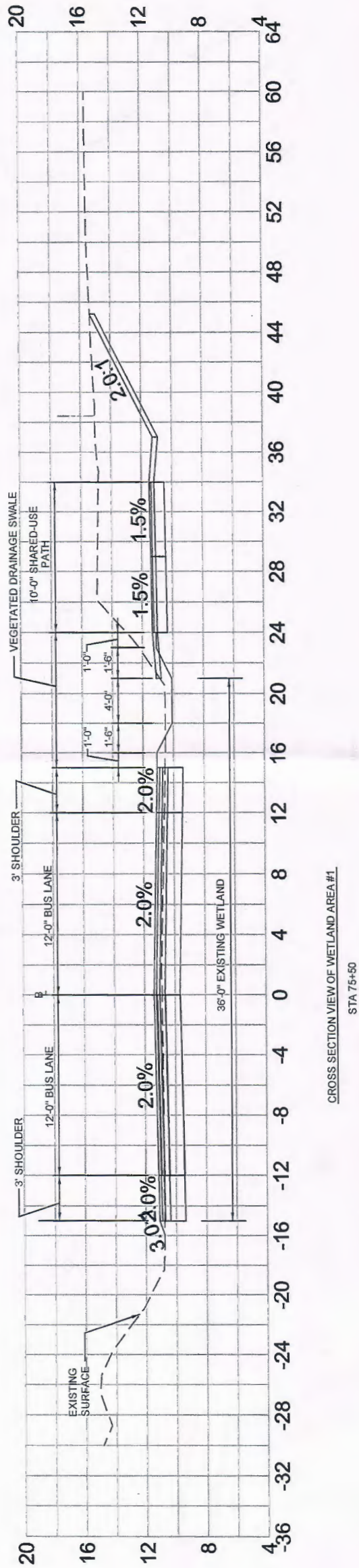
CONSTRUCTION DETAIL PLAN 2

DT-2

SHEET 4 OF 9

Highway Division

AECOM



NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY
CHELSEA, MA
SUFFOLK COUNTY

CONSTRUCTION DETAIL PLAN 2

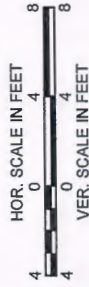
SHEET 5 OF 9

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

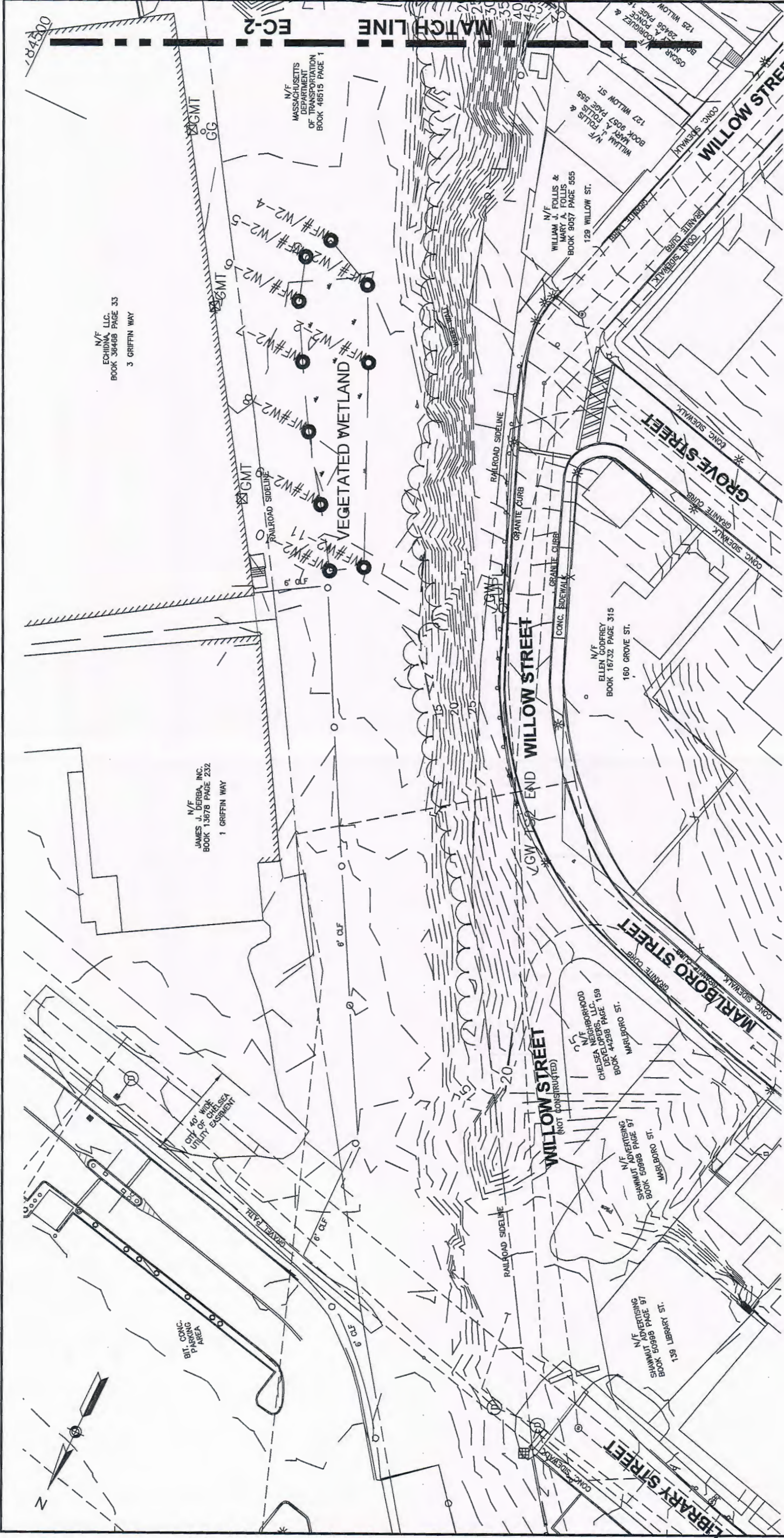
DATE: FEB. 2014

SCALE: AS SHOWN

WILL PLOT TO SCALE ON 11"x17" FORMAT



AECOM



NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
SILVER LINE GATEWAY CHELSEA, MA SUFFOLK COUNTY
EXISTING CONDITIONS PLAN 1
EC-1
SHEET 6 OF 9

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

DATE: FEB. 2014

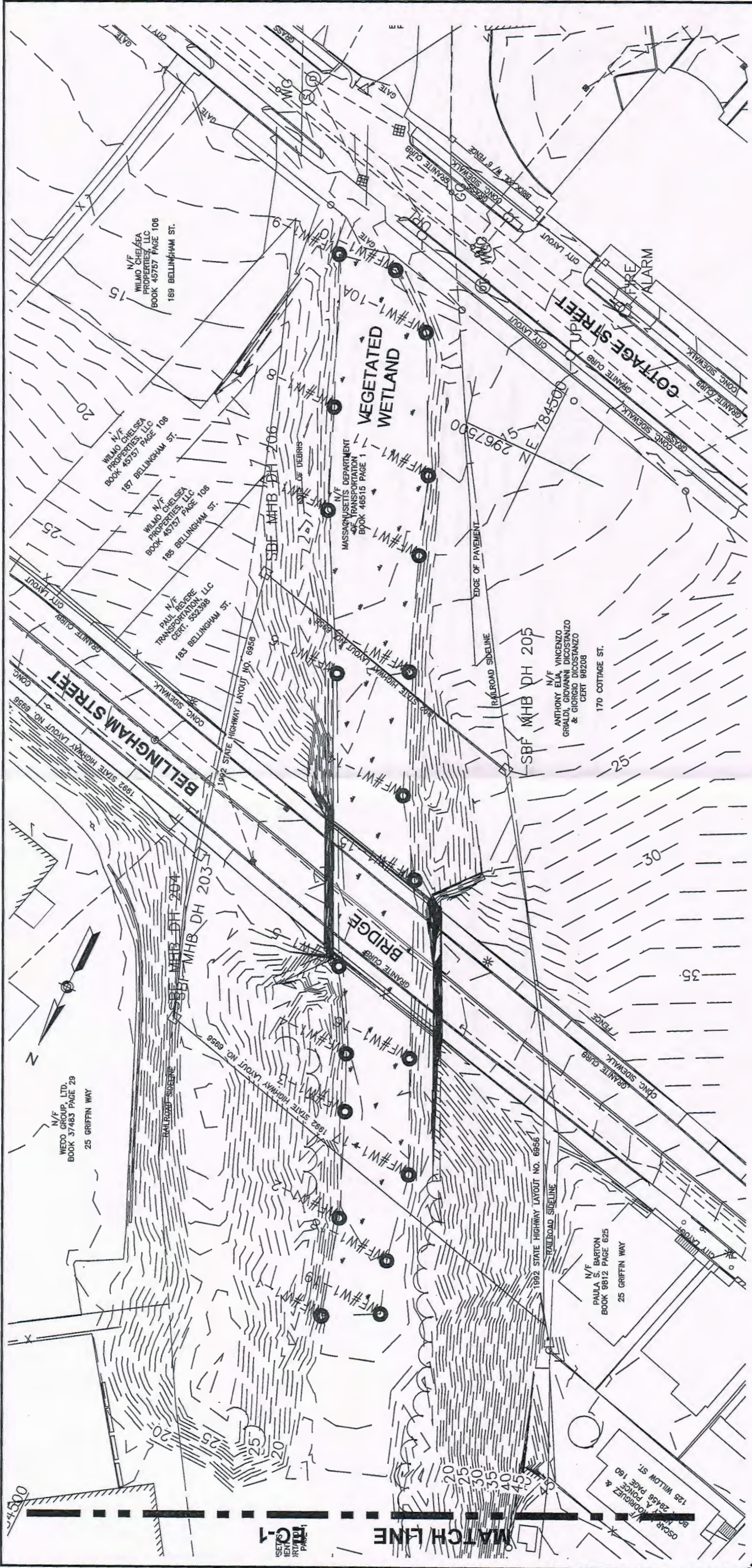
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WILL PLOT TO SCALE ON 11"x17" FORMAT



AECOM





NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
SILVER LINE GATEWAY
CHELSEA, MA
SUFFOLK COUNTY
EXISTING CONDITIONS PLAN 2
EC-2
SHEET 7 OF 9

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

DATE: FEB. 2014 SCALE: 1" = 40'

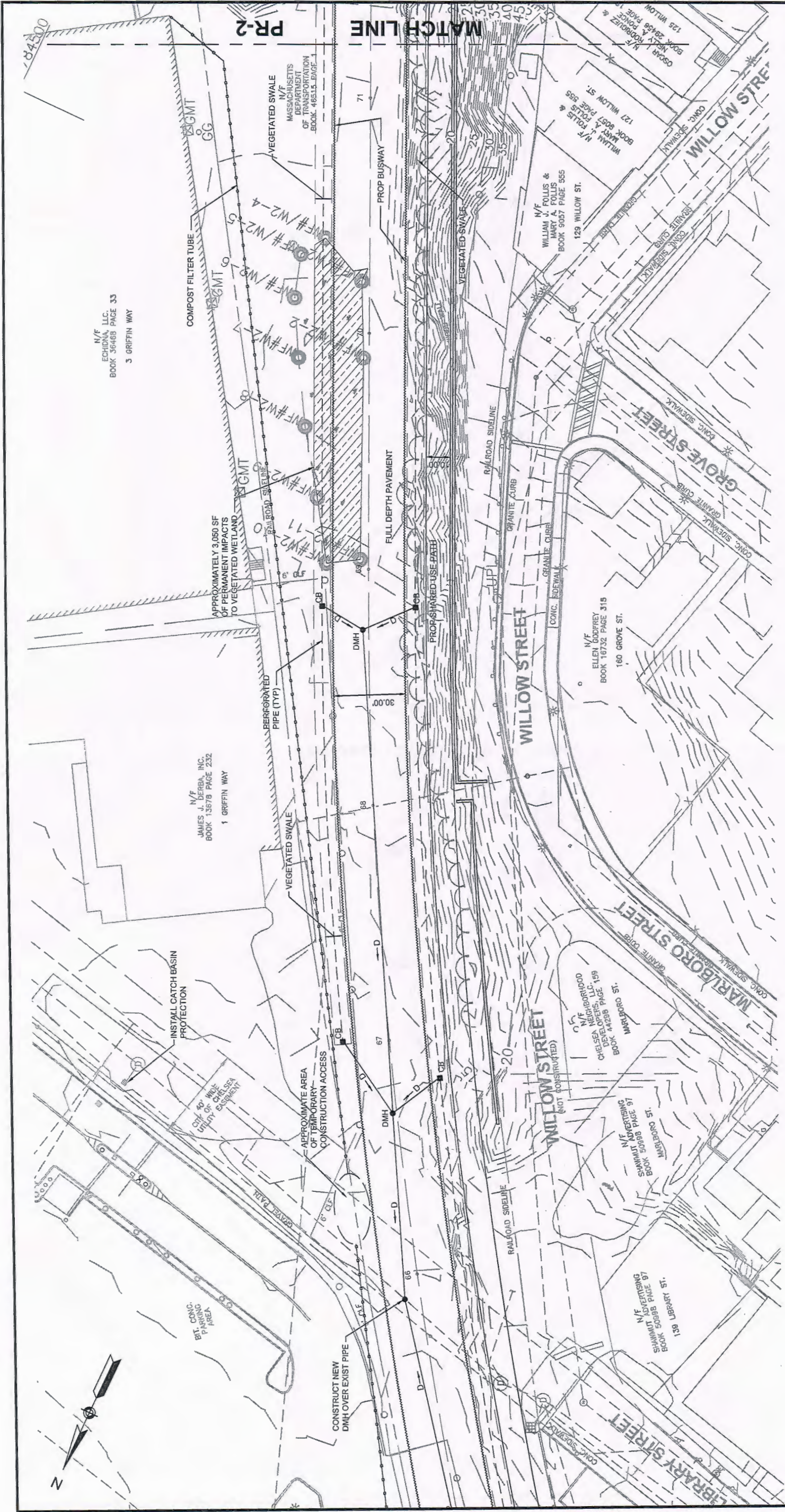


SCALE IN FEET

WILL PLOT TO SCALE ON 11"x17" FORMAT

AECOM





LEGEND:



13,798 SF PERMANENT IMPACTS TO VEGETATED WETLANDS



SCALE IN FEET

WILL PLOT TO SCALE ON 11"x17" FORMAT

NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY
CHELSEA, MA
SUFFOLK COUNTY

PROPOSED SITE PLAN 1

PR-1

SHEET 8 OF 9

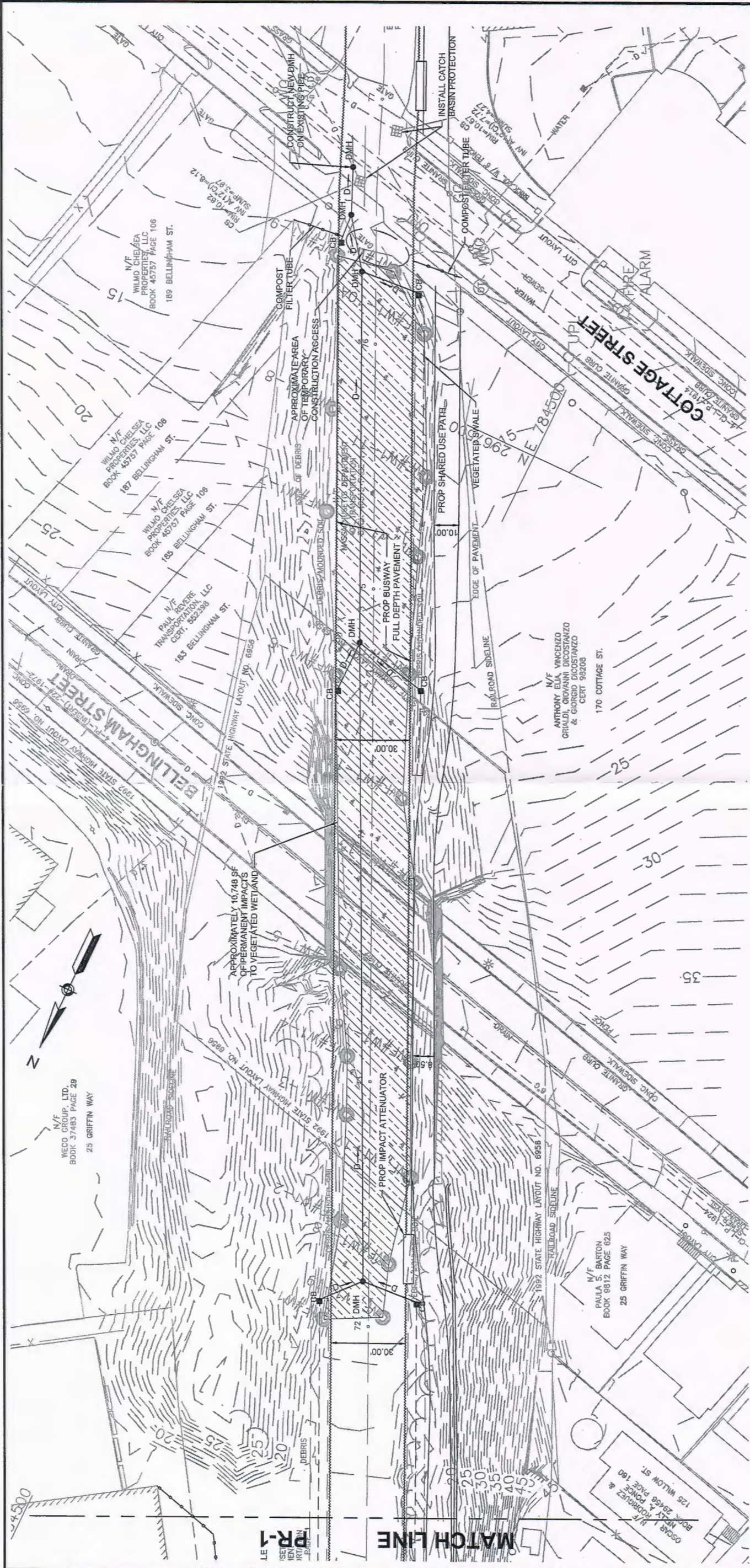
APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
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DATE: FEB. 2014

SCALE: 1" = 40'



AECOM



LEGEND:



13,798 SF PERMANENT IMPACTS TO VEGETATED WETLANDS



SCALE IN FEET

WILL PLOT TO SCALE ON 11"x17" FORMAT

NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION		
SILVER LINE GATEWAY CHELSEA, MA SUFFOLK COUNTY		
PROPOSED SITE PLAN 2		
PR-2		SHEET 9 OF 9

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

SCALE: 1" = 40'

DATE: FEB. 2014



AECOM